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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/368,354	08/05/1999	ROBERT R. BUCKLEY	103044	5438

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EXAMINER

POKRZYWA, JOSEPH R

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 04/27/2004

JB

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/368,354

Applicant(s)

BUCKLEY ET AL.

Examiner

Joseph R. Pokrzywa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 23.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 1-4, filed 3/31/04, with respect to claims 1 and 10 have been fully considered and are persuasive. Therefore, the rejection of independent **claims 1 and 10**, under 35 U.S.C. 102(e), cited as being anticipated by Bloomberg *et al.* (U.S. Patent Number 5,960,161), has been withdrawn. The examiner concedes that Bloomberg fails to teach of an overmarking processing, as defined by applicants, that allows both the at least one first color and the second color to be separately included in the overmarked pixels in the same raster image, since Bloomberg teaches of substituting a new, third color upon the determination of any overlapped pixels. However, upon further consideration, a new ground(s) of rejection is made in view of Schiller *et al.* (U.S. Patent Number 6,049,339).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-8, 10-17, 19, 21, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiller *et al.* (U.S. Patent Number 6,049,339).

Regarding *claim 1*, Schiller discloses a method of processing image data of a color image for marking (see Figs. 2 and 3), the color image containing overmarked pixels where at least one

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first color is to be overmarked by a second color (see Figs 4 and 5, and column 3, line 66 through column 4, line 10), the method comprising generating information that designates the overmarked pixels (see Figs. 4 and 5), performing raster image processing to create a raster image of the color image (column 3, lines 37 through 52), the raster image processing including overmarking processing that allows both the at least one first color and the second color to be separately included in the overmarked pixels in the same raster image (column 3, line 66 through column 5, line 7, wherein the colors of path 1 400 and path 2 405 are on different planer map representations), and modifying image data of the overmarked pixels in the raster image (column 2, lines 16 through 32, and column 3, line 66 through column 5, line 7).

However, Schiller fails to expressly disclose if the modifying image data of the overmarked pixels in the raster image is actually to **achieve undercolor reduction**. But Schiller does teach that by performing the planer map blending, the amount of overprinting is reduced, as read in column 2, lines 16 through 32. Applicant defines undercolor reduction as reducing the amount of ink to be printed on a substrate. Since Schiller teaches that the planer map blending process, which is interpreted as the modification of image data, reduces the amount of overprinting, the amount of ink that would be present on a substrate would accordingly be reduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to consider reducing the amount of overprinting as the equivalent to achieving undercolor reduction, so as to obtain the invention as specified in claim 1.

Regarding *claim 2*, Schiller discloses the method discussed above in claim 1, and further teaches that the modifying the image data of the overmarked pixels comprises modifying image data corresponding to the at least one first color (column 4, line 50 through column 5, line 7).

Regarding *claim 3*, Schiller discloses the method discussed above in claim 1, and further teaches of outputting the raster image, including the modified image data, to a marking driver (see Fig. 3, column 2, lines 16 through 32, and column 3, lines 26 through 44).

Regarding *claim 4*, Schiller discloses the method discussed above in claim 1, and further teaches that the modifying image data of the overmarked pixels comprises modifying a value of the image data corresponding to the at least one first color (column 3, line 66 through column 4, line 10, and column 4, line 50 through column 5, line 7).

Regarding *claim 5*, Schiller discloses the method discussed above in claim 4, but fails to expressly disclose if the modified value of the image data corresponding to the at least one first color results in a reduced amount of marking material corresponding to the at least one first color being applied to a marking substrate.

As discussed above, Schiller does teach that by performing the planer map blending, the amount of overprinting is reduced, as read in column 2, lines 16 through 32. Since Schiller teaches that the planer map blending process, which is interpreted as the modification of image data, reduces the amount of overprinting, the amount of ink that would be applied to a marking substrate would accordingly be reduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to consider reducing the amount of overprinting as the equivalent to achieving undercolor reduction, and thus teaching that the modified value of the image data

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corresponding to the at least one first color results in a reduced amount of marking material corresponding to the at least one first color being applied to a marking substrate, so as to obtain the invention as specified in claim 5.

Regarding *claim 6*, Schiller discloses the method discussed above in claim 1, and further teaches that the generating information that designates the overmarked pixels comprises generating tags that correspond to the overmarked pixels (column 3, lines 53 through 65, column 4, line 50 through column 5, line 7, and column 6, lines 14 through 36).

Regarding *claim 7*, Schiller discloses the method discussed above in claim 6, and further teaches that the overmarked pixels correspond to a *color image* and the tags indicate that the overmarked pixels are *color image pixels* (column 3, line 53 through column 5, line 7).

However, Schiller does not expressly disclose if the overmarked pixels correspond to a **black image** and the tags indicate that the overmarked pixels are **black image pixels**.

But Schiller teaches that the overmarked pixels correspond to a color image, with a first color corresponding to a path 1 400 and a second color corresponding to a path 2 405, as read in column 3, line 66 through column 4, line 36. Further, Schiller teaches that the renderer output is sent to a standard printer 305 (color or grayscale), as read in column 3, lines 38 through 44.

Since a standard printer utilizes colors that include black (CMYK), as is widely known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include black as a color of one of the paths, thereby having the overmarked pixels correspond to a black image and the tags indicate that the overmarked pixels are black image pixels, so as to obtain the invention as specified in claim 7.

Regarding *claim 8*, Schiller discloses the method discussed above in claim 6, and further teaches that the overmarked pixels correspond to **one of** black text and a *color stroke* (column 1, lines 23 through 36), and the tags indicate that the overmarked pixels are **one of** black text pixels and *color stroke pixels* (column 3, line 53 through column 5, line 7).

However, Schiller does not expressly disclose if the overmarked pixels correspond to a **black stroke** and the tags indicate that the overmarked pixels are **black stroke pixels**.

But Schiller teaches that the overmarked pixels correspond to a color image, with a first color corresponding to a path 1 400 and a second color corresponding to a path 2 405, as read in column 3, line 66 through column 4, line 36. Further, Schiller teaches that the renderer output is sent to a standard printer 305 (color or grayscale), as read in column 3, lines 38 through 44.

Since a standard printer utilizes colors that include black (CMYK), as is widely known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include black as a color of one of the paths, thereby having the overmarked pixels correspond to a black stroke and the tags indicate that the overmarked pixels are black stroke pixels, so as to obtain the invention as specified in claim 8.

Regarding *claim 10*, Schiller discloses a system that processes image data of a color image for marking (see Figs. 2 and 3), the color image containing overmarked pixels where at least one first color is to be overmarked by a second color (see Figs 4 and 5, and column 3, line 66 through column 4, line 10), the system comprising an overmarked pixel designator that generates information that designates the overmarked pixels (see Figs. 4 and 5), a raster image processor that creates a raster image of the color image (column 3, lines 37 through 52), the raster image processor provided with an overmarking function that allows both the at least one

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first color and the second color to be separately included in the overmarked pixels in the same raster image (column 3, line 66 through column 5, line 8, wherein the colors of path 1 400 and path 2 405 are on different planer map representations), and an image data modification unit that modifies image data of the overmarked pixels in the raster image (column 2, lines 16 through 32, and column 3, line 66 through column 5, line 7).

However, Schiller fails to expressly disclose if the modifying image data of the overmarked pixels in the raster image is actually to **achieve undercolor reduction**. But Schiller does teach that by performing the planer map blending, the amount of overprinting is reduced, as read in column 2, lines 16 through 32. Applicant defines undercolor reduction as reducing the amount of ink to be printed on a substrate. Since Schiller teaches that the planer map blending process, which is interpreted as the modification of image data, reduces the amount of overprinting, the amount of ink that would be present on a substrate would accordingly be reduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to consider reducing the amount of overprinting as the equivalent to achieving undercolor reduction, so as to obtain the invention as specified in claim 10.

Regarding **claim 11**, Schiller discloses the system discussed above in claim 10, and further teaches that the modified image data is image data corresponding to the at least one first color (column 4, line 50 through column 5, line 7).

Regarding **claim 12**, Schiller discloses the system discussed above in claim 10, and further teaches of a marking driver that performs marking according to the raster image,

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including the modified image data (see Fig. 3, column 2, lines 16 through 32, and column 3, lines 26 through 44).

Regarding *claim 13*, Schiller discloses the system discussed above in claim 10, and further teaches that the image data modification unit modifies a value of the image data corresponding to the at least one first color (column 3, line 66 through column 4, line 10, and column 4, line 50 through column 5, line 7).

Regarding *claim 14*, Schiller discloses the system discussed above in claim 13, and further teaches of a marking driver that performs marking according to the raster image that includes the modified image data (see Fig. 3, column 2, lines 16 through 32, and column 3, lines 26 through 44).

However, Schiller does not expressly disclose if the marking driver marks a reduced amount of marking material corresponding to the at least one first color being applied to a marking substrate based on the modified value of the image data corresponding to the at least one first color.

As discussed above, Schiller does teach that by performing the planer map blending, the amount of overprinting is reduced, as read in column 2, lines 16 through 32. Since Schiller teaches that the planer map blending process, which is interpreted as the modification of image data, reduces the amount of overprinting, the amount of ink that would be applied to a marking substrate would accordingly be reduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to consider reducing the amount of overprinting as the equivalent to achieving undercolor reduction, and thus teaching that the marking driver marks a reduced

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amount of marking material corresponding to the at least one first color being applied to a marking substrate based on the modified value of the image data corresponding to the at least one first color, so as to obtain the invention as specified in claim 14.

Regarding *claim 15*, Schiller discloses the system discussed above in claim 10, and further teaches that the overmarked pixel designator comprises a tag generator that generates tags that correspond to the overmarked pixels (column 3, lines 53 through 65, column 4, line 50 through column 5, line 7, and column 6, lines 14 through 36).

Regarding *claim 16*, Schiller discloses the system discussed above in claim 15, and further teaches that the overmarked pixels correspond to a *color image* and the tags indicate that the overmarked pixels are *color image pixels* (column 3, line 53 through column 5, line 7).

However, Schiller does not expressly disclose if the overmarked pixels correspond to a **black image** and the tags indicate that the overmarked pixels are **black image pixels**.

But Schiller teaches that the overmarked pixels correspond to a color image, with a first color corresponding to a path 1 400 and a second color corresponding to a path 2 405, as read in column 3, line 66 through column 4, line 36. Further, Schiller teaches that the renderer output is sent to a standard printer 305 (color or grayscale), as read in column 3, lines 38 through 44.

Since a standard printer utilizes colors that include black (CMYK), as is widely known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include black as a color of one of the paths, thereby having the overmarked pixels correspond to a black image and the tags indicate that the overmarked pixels are black image pixels, so as to obtain the invention as specified in claim 16.

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Regarding *claim 17*, Schiller discloses the system discussed above in claim 15, and further teaches that the overmarked pixels correspond to **one of black text and a color stroke** (column 1, lines 23 through 36), and the tags indicate that the overmarked pixels are **one of black text pixels and color stroke pixels** (column 3, line 53 through column 5, line 7).

However, Schiller does not expressly disclose if the overmarked pixels correspond to a **black stroke** and the tags indicate that the overmarked pixels are **black stroke pixels**.

But Schiller teaches that the overmarked pixels correspond to a color image, with a first color corresponding to a path 1 400 and a second color corresponding to a path 2 405, as read in column 3, line 66 through column 4, line 36. Further, Schiller teaches that the renderer output is sent to a standard printer 305 (color or grayscale), as read in column 3, lines 38 through 44.

Since a standard printer utilizes colors that include black (CMYK), as is widely known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include black as a color of one of the paths, thereby having the overmarked pixels correspond to a black stroke and the tags indicate that the overmarked pixels are black stroke pixels, so as to obtain the invention as specified in claim 17.

Regarding *claim 19*, Schiller discloses a printer incorporating the system set forth in claim 10 (column 2, lines 16 through 32, column 3, lines 10 through 25, and column 8, lines 23 through 28).

Regarding *claim 21*, Schiller discloses a storage medium on which is stored a program that implements the method set forth in claim 1 (column 2, lines 16 through 32, column 3, lines 10 through 25, and column 8, lines 23 through 28).

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Regarding **claim 22**, Schiller discloses a storage medium on which is stored data that has been processed according to the method set forth in claim 1 (see Fig. 3, column 3, lines 38 through 47).

4. **Claims 9, 18, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiller *et al.* (U.S. Patent Number 6,049,339) in view of Miller *et al.* (U.S. Patent Number 5,731,823, cited in the Office action dated 3/9/04).

Regarding **claim 9**, Schiller discloses the method discussed above in claim 1, and further teaches that the generating information that designates the overmarked pixels comprises designating pixels that form the recognized patterns as the overmarked pixels (column 1, line 23 through column 2, line 7, and column 3, lines 26 through 65).

However, Schiller does not expressly disclose if the generating information that designates the overmarked pixels also comprises performing pattern recognition that recognizes specified patterns.

Miller discloses a method of processing image data of a color image for marking (see abstract), the color image containing overmarked pixels where at least one first color is to be overmarked by a second color (column 6, lines 25 through 52), the method comprising generating information that designates the overmarked pixels (column 3, lines 35 through 50, and column 6, line 25 through column 7, line 13), performing raster image processing to create a raster image of the color image (column 5, lines 33 through 43, and column 7, lines 14 through 21), and modifying image data of the overmarked pixels in the raster image (column 5, lines 44 through 67, and column 7, lines 21 through 64). Further, Miller teaches that the generating

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information that designates the overmarked pixels comprises performing pattern recognition that recognizes specified patterns (see abstract, column 3, lines 35 through 65), and designating pixels that form the recognized patterns as the overmarked pixels (column 6, line 25 through column 7, line 54).

Schiller & Miller are combinable because they are from the same field of endeavor, being rasterizing page description signals to be output to a printing device.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the pattern recognition teachings of Miller in the system of Schiller.

The suggestion/motivation for doing so would have been that Schiller's system would easily be modified with Miller's teachings, since both systems input PDL language data to be rasterized, whereby objects could easily be identified by their attributes, as recognized by Miller.

Therefore, it would have been obvious to combine the teachings of Miller with the system of Schiller to obtain the invention as specified in claim 9.

Regarding *claim 18*, Schiller discloses the system discussed above in claim 10, and further teaches that the overmarked pixel designator comprises designating pixels that form the recognized patterns as the overmarked pixels (column 1, line 23 through column 2, line 7, and column 3, lines 26 through 65).

However, Schiller fails to expressly disclose if the overmarked pixel designator comprises a pattern recognition device that recognizes specified patterns and designates pixels that form the recognized patterns as the overmarked pixels.

Miller discloses a system that processes image data of a color image for marking (see abstract), the color image containing overmarked pixels where at least one first color is to be

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overmarked by a second color (column 6, lines 25 through 52), the system comprising an overmarked pixel designator that generates information that designates the overmarked pixels (column 3, lines 35 through 50, and column 6, line 25 through column 7, line 13), a raster image processor that creates a raster image of the color image (column 5, lines 33 through 43, and column 7, lines 14 through 21), and an image data modification unit that modifies image data of the overmarked pixels in the raster image (column 5, lines 44 through 67, and column 7, lines 21 through 64). Further, Miller teaches that the overmarked pixel designator comprises a pattern recognition device that recognizes specified patterns (see abstract, column 3, lines 35 through 65) and designates pixels that form the recognized patterns as the overmarked pixels (column 6, line 25 through column 7, line 54).

Schiller & Miller are combinable because they are from the same field of endeavor, being rasterizing page description signals to be output to a printing device.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the pattern recognition teachings of Miller in the system of Schiller.

The suggestion/motivation for doing so would have been that Schiller's system would easily be modified with Miller's teachings, since both systems input PDL language data to be rasterized, whereby objects could easily be identified by their attributes, as recognized by Miller.

Therefore, it would have been obvious to combine the teachings of Miller with the system of Schiller to obtain the invention as specified in claim 18.

Regarding *claim 20*, Schiller discloses a printing apparatus incorporating the system set forth in claim 10 (column 2, lines 8 through 32, and column 3, lines 26 through 47), but fails to expressly disclose if a digital copier incorporates the system.

Miller discloses a system that processes image data of a color image for marking (see abstract), the color image containing overmarked pixels where at least one first color is to be overmarked by a second color (column 6, lines 25 through 52), the system comprising an overmarked pixel designator that generates information that designates the overmarked pixels (column 3, lines 35 through 50, and column 6, line 25 through column 7, line 13), a raster image processor that creates a raster image of the color image (column 5, lines 33 through 43, and column 7, lines 14 through 21), and an image data modification unit that modifies image data of the overmarked pixels in the raster image (column 5, lines 44 through 67, and column 7, lines 21 through 64). Further, Miller teaches of a digital copier incorporating the system set forth above (column 11, line 45 through column 12, line 6).

Schiller & Miller are combinable because they are from the same field of endeavor, being rasterizing page description signals to be output to a printing device.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Miller having a digital copier incorporating the system, in the system of Schiller.

The suggestion/motivation for doing so would have been that Schiller's system would easily be modified with Miller's teachings, since both systems input PDL language data to be rasterized, whereby objects could easily be identified by their attributes, as recognized by Miller.

Therefore, it would have been obvious to combine the teachings of Miller with the system of Schiller to obtain the invention as specified in claim 20.

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Citation of Pertinent Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Dermer (U.S. Patent Number 5,613,046) discloses a system that generates a trapped graphic image, which is then rasterized.

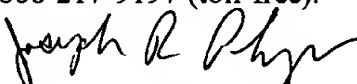
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joe Pokrzywa whose telephone number is (703) 305-0146. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (703) 305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jrp



Joseph R. Pokrzywa
Examiner
Art Unit 2622



EDWARD COLES

SUPERVISORY PATENT EXAMINER
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